

## ABSTRACT

A method and apparatus for compensating for phase fluctuations incurred by an optical beam travelling through free space, especially a turbulent atmosphere. A  
5 transmitting station transmits a plurality of uniquely tagged optical beams through free space. The plurality of uniquely tagged optical beams are received at a receiving station, where a parameter of each uniquely tagged optical beam is quantified. Information associated with the quantified parameter for each uniquely tagged optical beam is then sent back to the transmitting station via a wireless feedback link. Using the information,  
10 the transmitting station adjusts at least one uniquely tagged optical beam to compensate for phase fluctuations.